Schematic diagrams of replication competent EIA viruses and Constructs

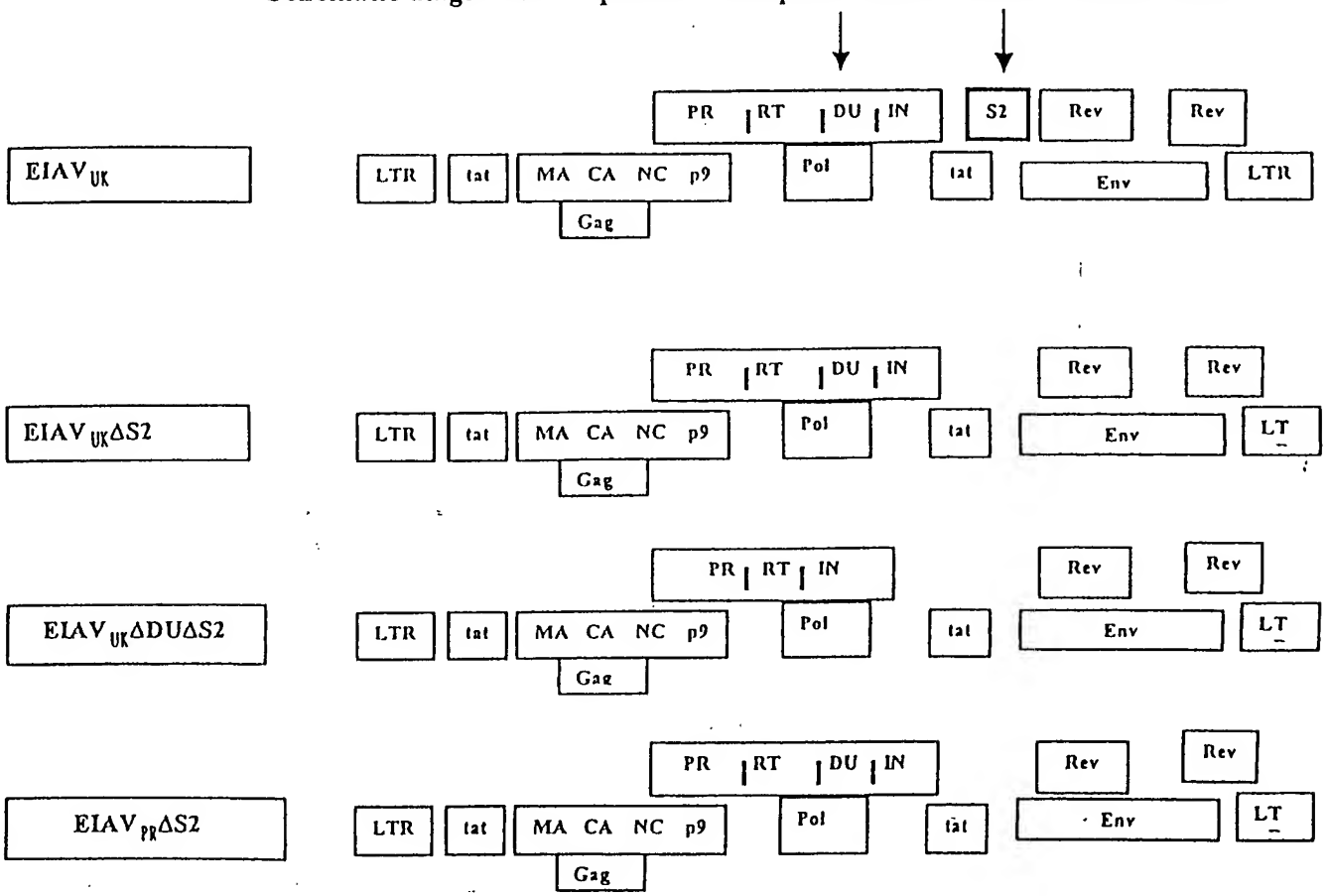
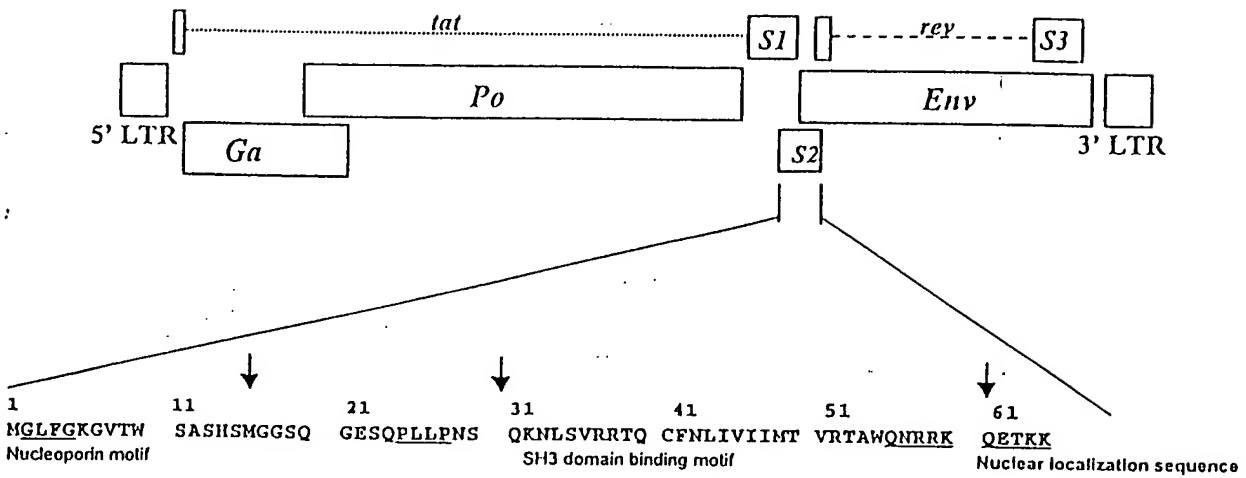


FIG. 1

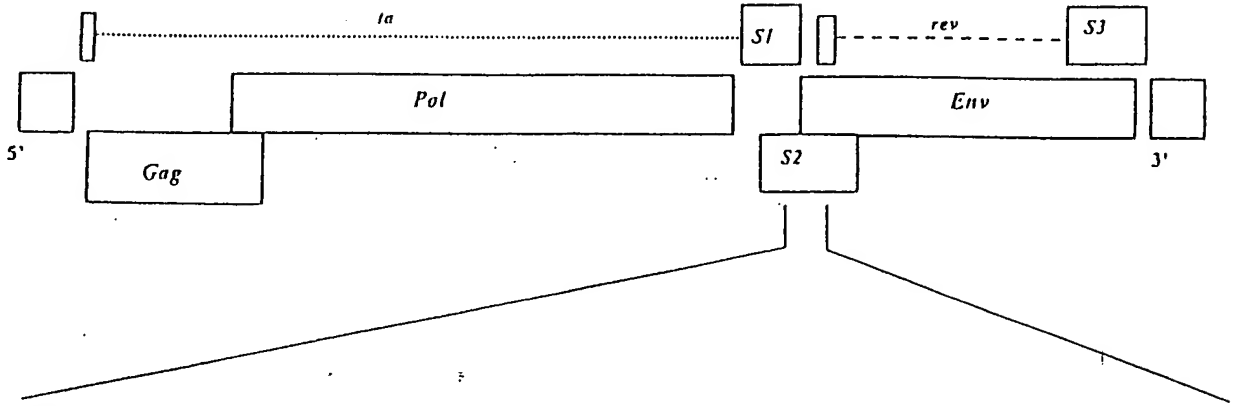
Schematic representation of EIA virus S2 gene and mutant clones derived from $EIAV_{UK}$. The EIA proviral DNA is shown at the top; the complete deduced amino acid sequence of the putative S2 protein is shown in single letter amino acid code at the bottom. Stop codons (indicated by arrows) were introduced into various positions in the EIA virus S2 gene to generate the specific mutant virus strains.



EIAV.G5/s	Stop codon replaced amino acid G^5
EIAV.2M/X	M^{16} changed to T Stop codons replaced G^5 and G^{18}
EIAV.Δ*S2*	Deletion of initial 5 nucleotides of *S2*

FIG. 2a

Schematic representation of the Wild-type EIAV *S2* gene compared with the Δ *S2* gene of EIAV.2M/X ($EIAV_{IIK}\Delta S2$)



Wild type

```
ATG GGA TTA TTT GGT AAA GGG GTA ACA TGG TCA GCA TCG CAT TCT ATG GGG GGA TCC CAG GGG GAA TCT CAA
 M   G   L   F   G   K   G   V   T   W   S   A   S   H   S   M   G   G   S   Q   G   E   S   Q
CCC CTA TTA CCC AAC AGT CAG AAA AAT CTA AGT GTG AGG AGA ACA CAA TGT TTC AAC CTT ATT GTT ATA ATA
 P   L   L   P   N   S   Q   K   N   L   S   V   R   R   T   Q   C   F   N   L   I   V   I   I
ATG ACA GTA AGA ACA GCA TGG CAG AAT CGA AGG AAG CAA GAG ACC AAG AAA
 M   T   V   R   T   A   W   Q   N   R   R   K   Q   E   T   K   K
```

Δ*S2*

```
ATG GGA GTA TAC TAG TGT AAA GGG GTA ACA TGG TCA GCA TCG CAT TCT ACG GGG TGA TCC CAG GGG GAA TCT
 M   G   V   Y   •   C   K   G   V   T   W   S   A   S   H   S   T   G   •   S   Q   G   E   S
CAA CCC CTA TTA CCC AAC AGT CAG AAA AAT CTA AGT GTG AGG AGA ACA CAA TGT TTC AAC CTT ATT GNT ATA
 Q   P   L   L   P   N   S   Q   K   N   L   S   V   R   R   T   Q   C   F   N   L   I   V   I
ATA ATG ACA GTA AGA ACA GCA TGG CAG AAT CGA AGG AAG CAA GAG ACC AAG AAA
 I   M   T   V   R   T   A   W   Q   N   R   R   K   Q   E   T   K   K
```

FIG. 2b

Circular Map of $EIAV_{UK}$ ΔDUΔS2

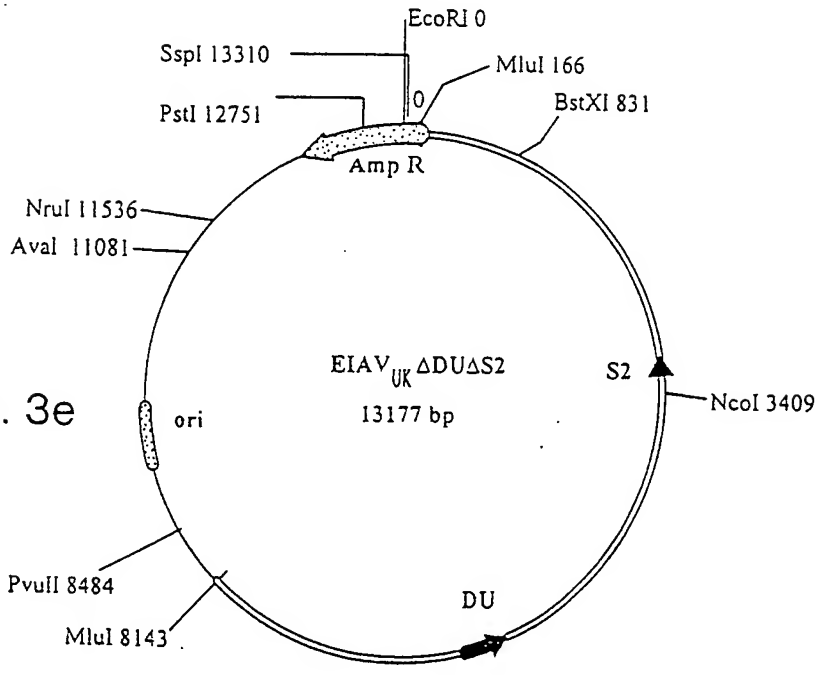


FIG. 3e

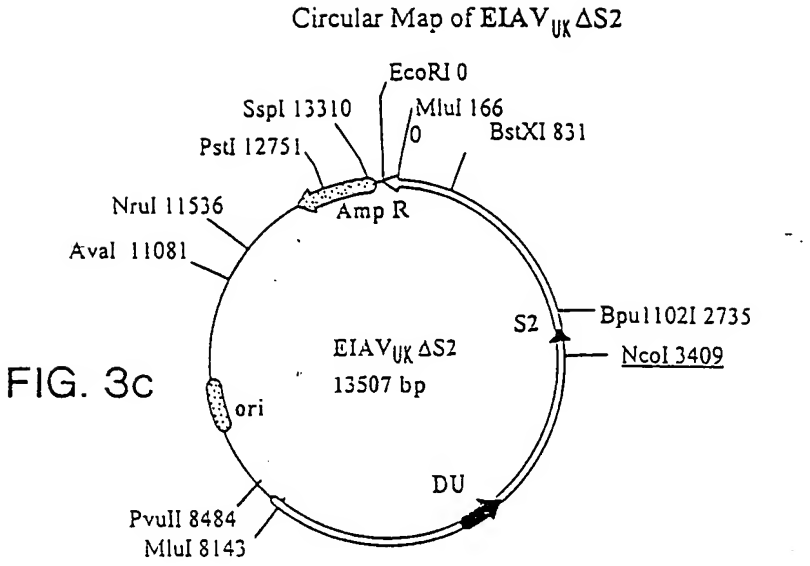

Circular Map of EIAV UK ΔS2
EcoRI 0
SspI 13310
MluI 166
0
BstXI 831
PstI 12751
Amp R
NruI 11536
AvaI 11081
S2
Bpu1102I 2735
NcoI 3409
EIAV UK ΔS2
13507 bp
ori
DU
PvuII 8484
MluI 8143

FIG. 3c

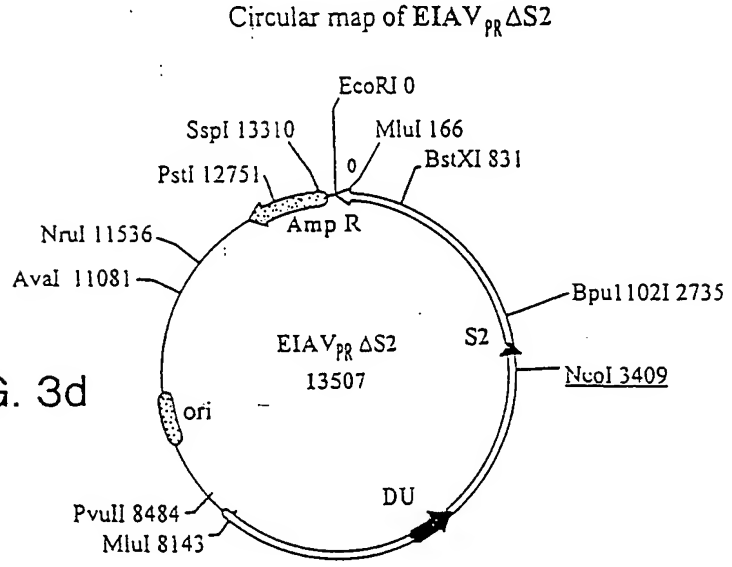
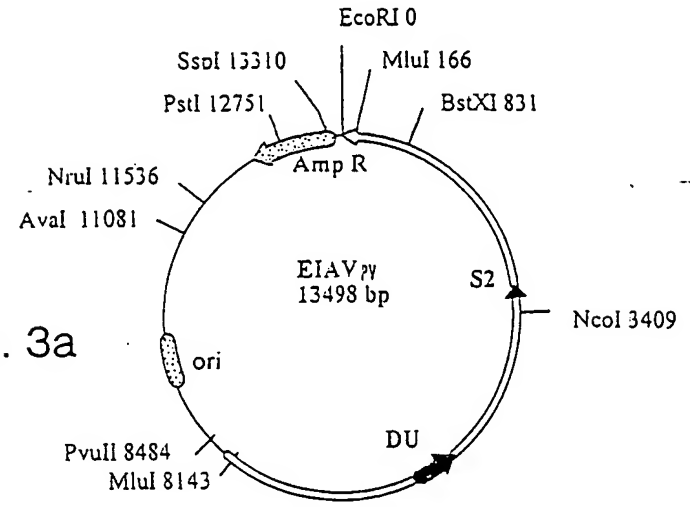

Circular map of EIAV PR ΔS2
EcoRI 0
SspI 13310
MluI 166
0
BstXI 831
PstI 12751
Amp R
NruI 11536
AvaI 11081
Bpu1102I 2735
S2
NcoI 3409
EIAV PR ΔS2
13507
ori
DU
PvuII 8484
MluI 8143

FIG. 3d

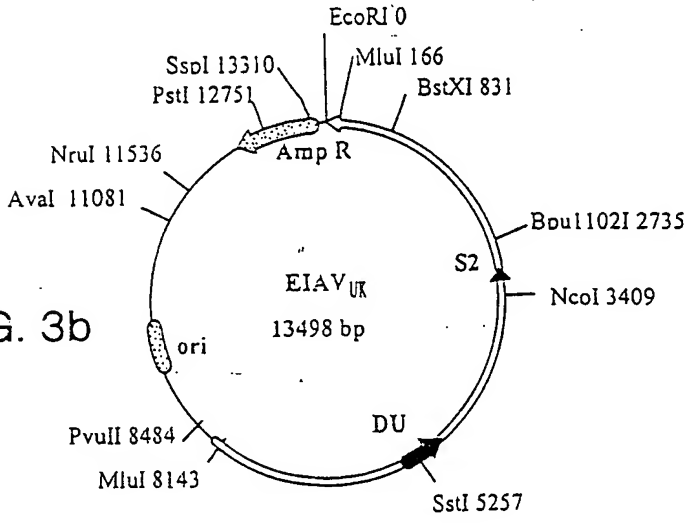
Circular Map of Biological Proviral Clone $EIAV_{PR}$

FIG. 3a



Circular Map of Molecular Infectious Clone $EIAV_{UK}$

FIG. 3b



Replication of EIA Virus Mutant Clones *in vitro*

Replication in ED Cell Line

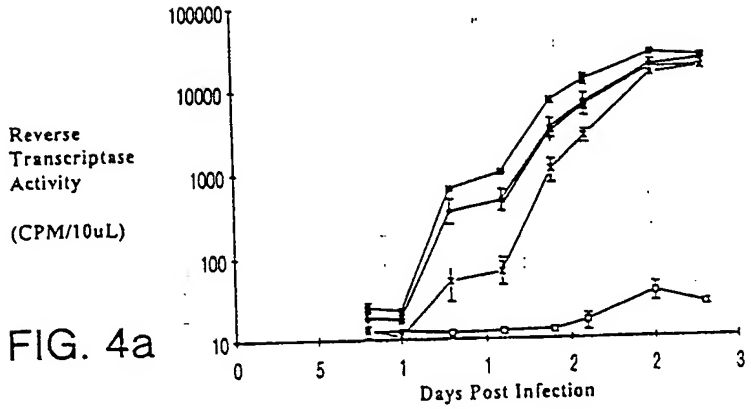


FIG. 4a

Replication in MDM Cells

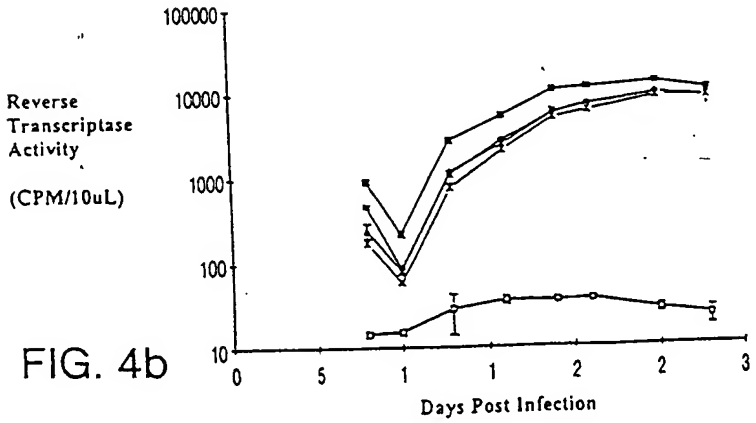
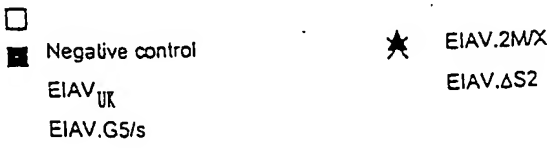


FIG. 4b



Schematic Representation of the *DU* gene and construction of EIAVΔDU

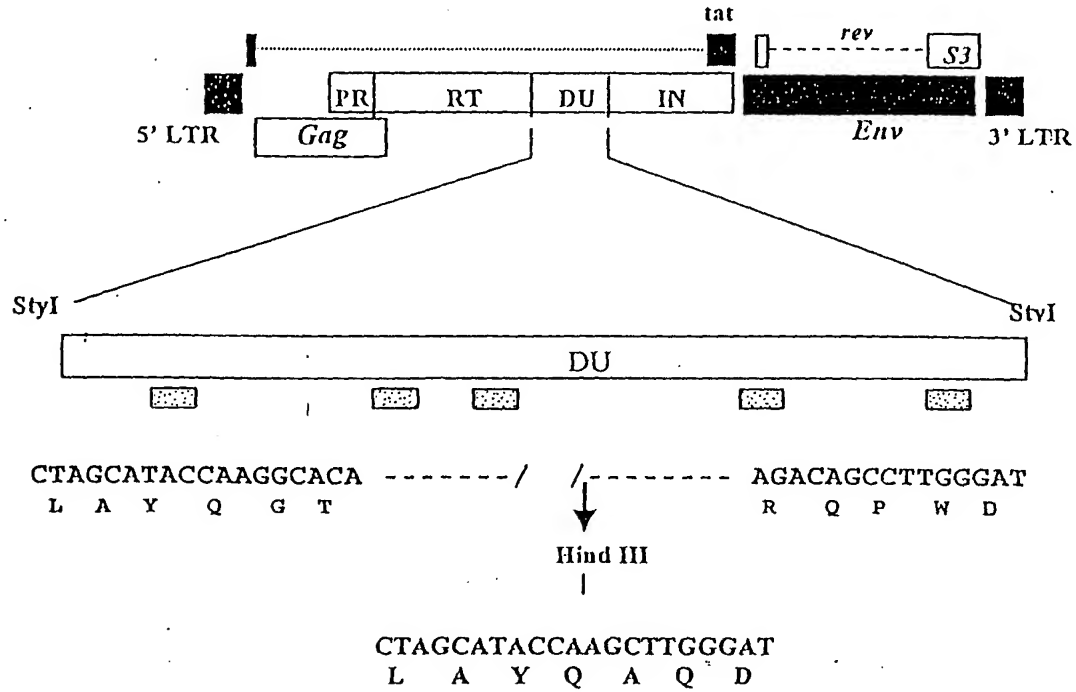


FIG. 5

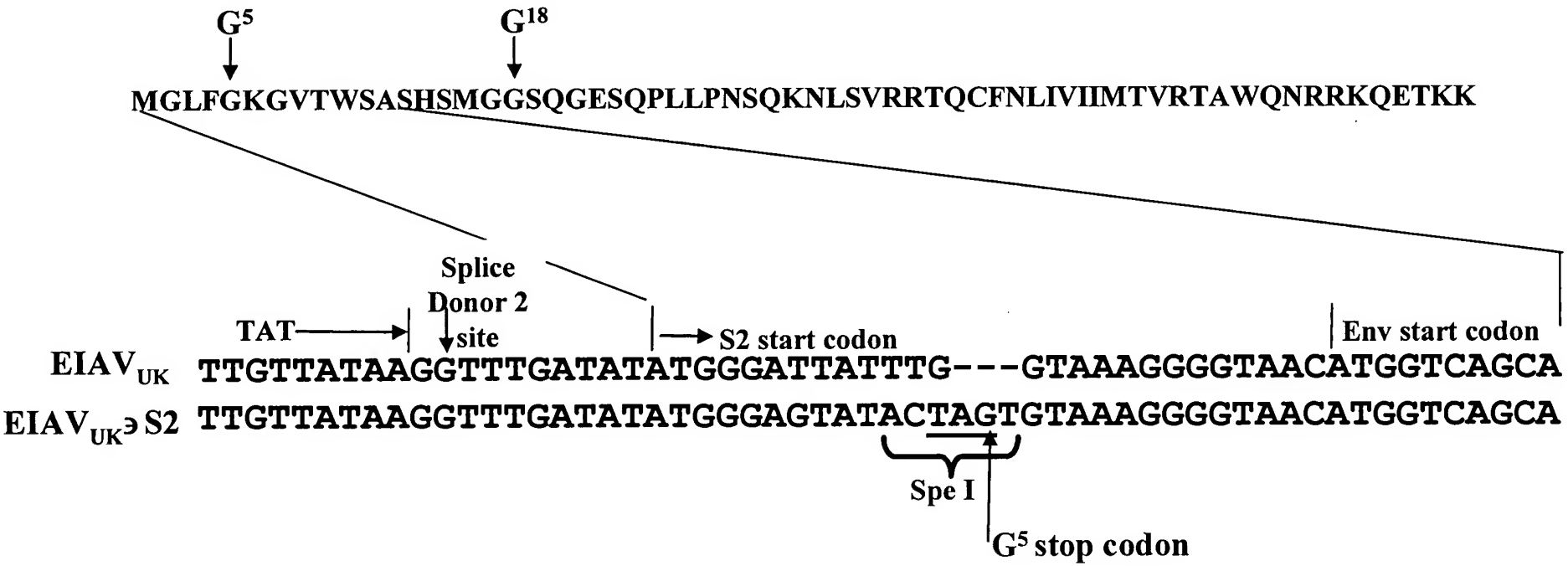

G5
G18
MGLFGKGVTWSASHSMGGSQGESQPLLPNSQKNLSVRRTQCFNLIVIIMTVRTAWQNRRKQETKK
Splice
Donor 2
site
TAT
S2 start codon
Env start codon
EIAVUK TTGTTATAAGGTTTGATATATGGGATTATTTG---GTAAAGGGGTAACATGGTCAGCA
EIAVUKΘS2 TTGTTATAAGGTTTGATATATGGGAGTATACTAGTGTAAAGGGGTAACATGGTCAGCA
Spe I
G5 stop codon

FIGURE 6

```
ɜS2:  TTGTTATAAGGTTTGATATATGGGAGTATACTAGTGTAAAGGGGTAACATGGTCAGCA
D14:  TTGTTATAAGGTTT--------------TACTAGTGTAAAGGGGTAACATGGTCAGCA
D25:  TTGTTATAAGGTTT--------------TACTAGT----------ACATGGTCAGCA
```

FIGURE 7

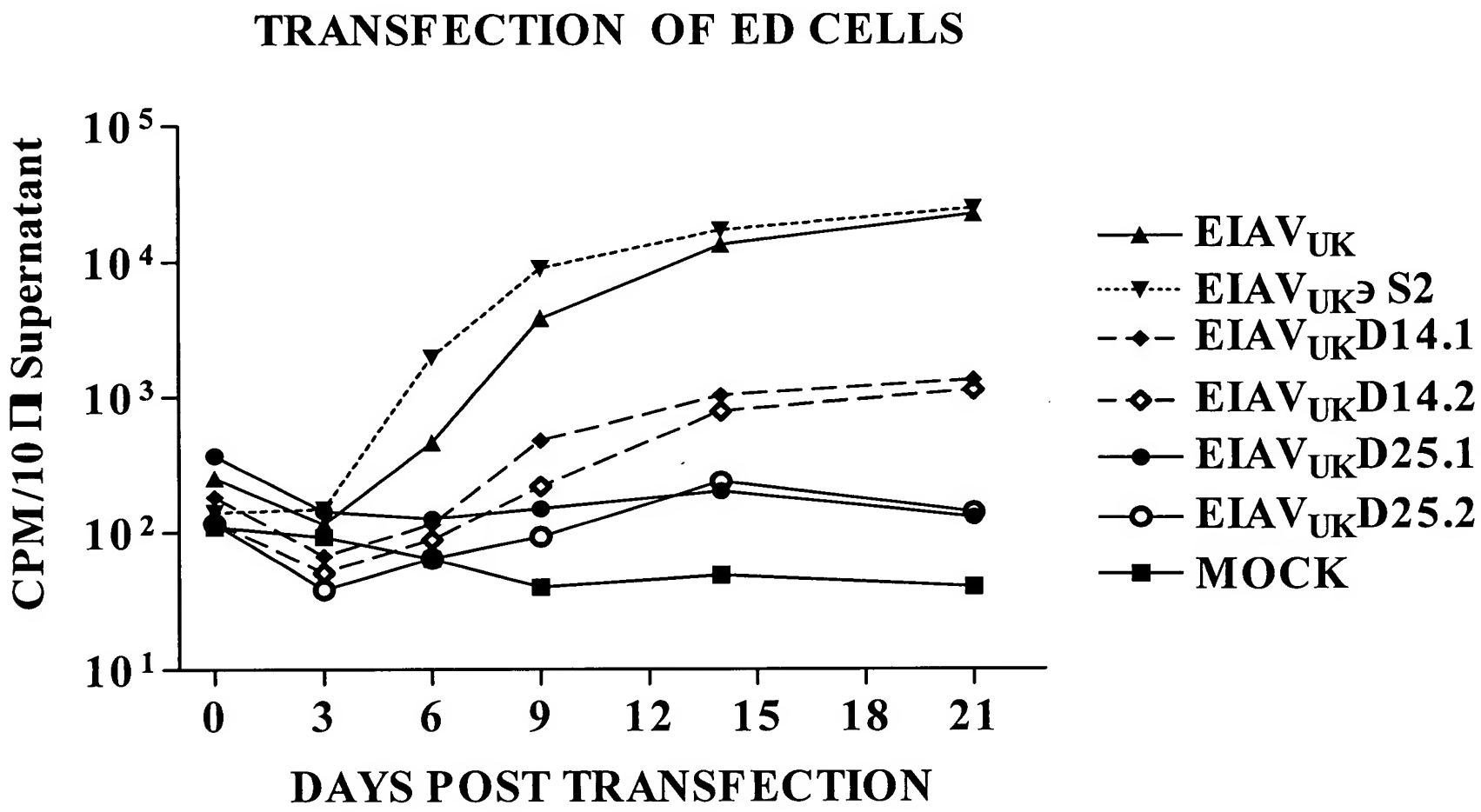

TRANSFECTION OF ED CELLS
CPM/10 Π Supernatant
10 5
10 4
10 3
10 2
10 1
0
3
6
9
12
15
18
21
DAYS POST TRANSFECTION
EIAV UK
EIAV UKэ S2
EIAV UKD14.1
EIAV UKD14.2
EIAV UKD25.1
EIAV UKD25.2
MOCK

FIGURE 8

```
ɜS2:  TTGTTATAAGGTTTGATATATGGGAGTATACTAGTGTAAAGGGGTAACATGGTCAGCA
 D6:  TTGTTATAAGGTTTGA------GGAGTATACTAGTGTAAAGGGGTAACATGGTCAGCA
 D9:  TTGTTATAAGGTTTGA---------GTATACTAGTGTAAAGGGGTAACATGGTCAGCA
```

FIGURE 9

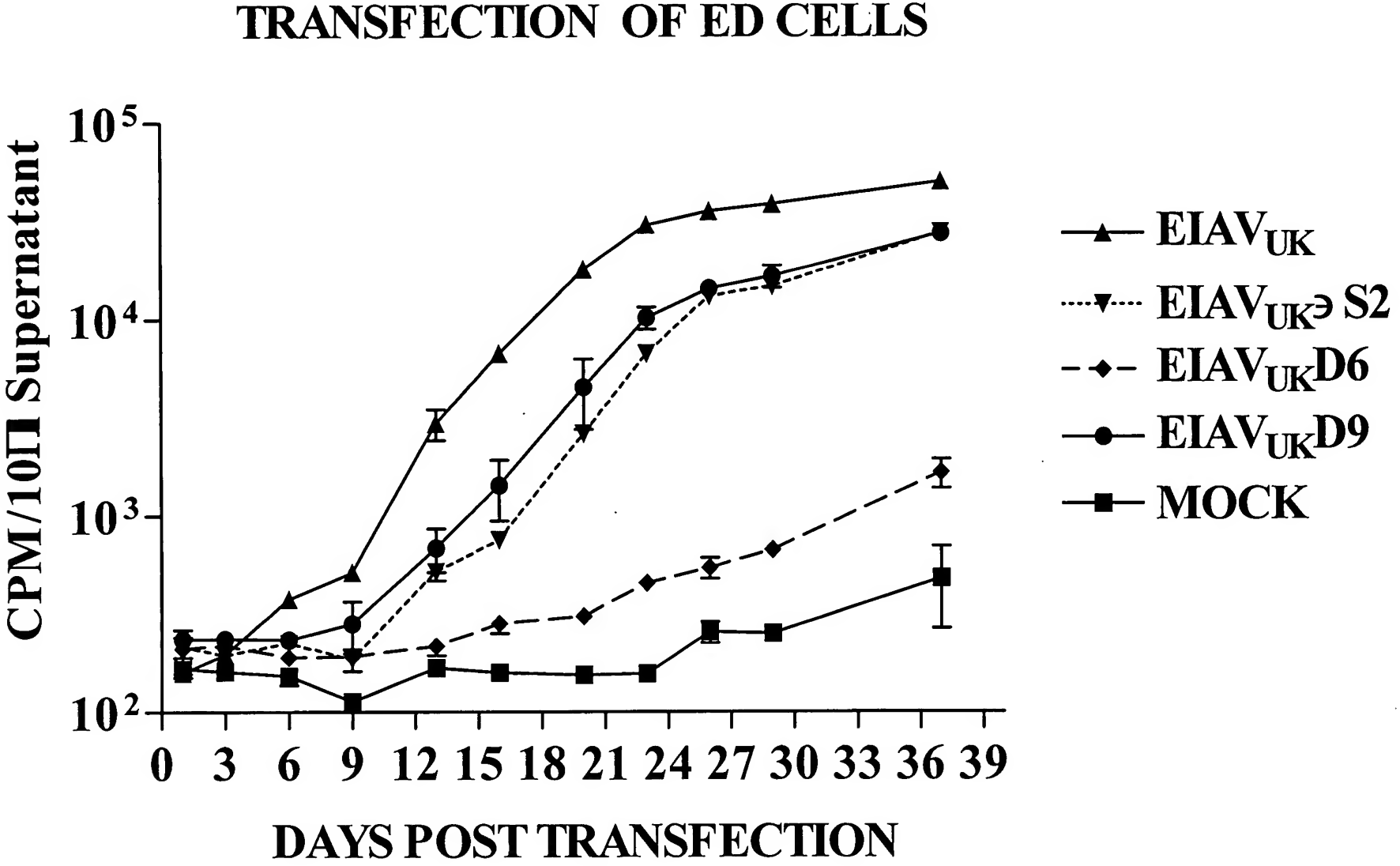

TRANSFECTION OF ED CELLS
CPM/10П Supernatant
10⁵
10⁴
10³
10²
0 3 6 9 12 15 18 21 24 27 30 33 36 39
DAYS POST TRANSFECTION
EIAVUK
EIAVUKЭ S2
EIAVUKD6
EIAVUKD9
MOCK

FIGURE 10

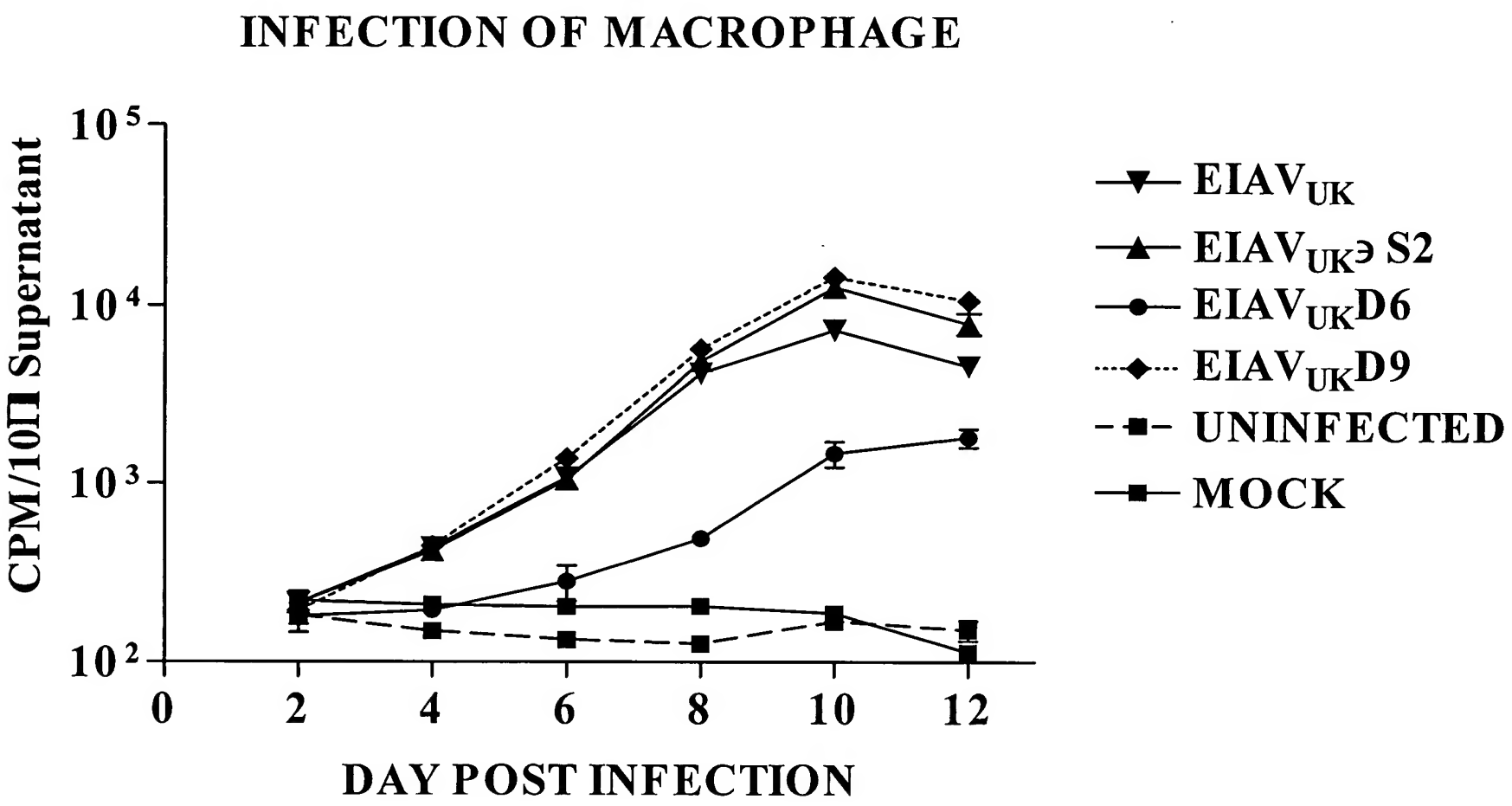

INFECTION OF MACROPHAGE
CPM/10Π Supernatant
10 5
10 4
10 3
10 2
0
2
4
6
8
10
12
DAY POST INFECTION
EIAVUK
EIAVUKэ S2
EIAVUKD6
EIAVUKD9
UNINFECTED
MOCK

FIGURE 11